

CLAIMS

1. A holographic recording medium, comprising: a first substrate; a hybrid material layer which is formed on this first substrate and contains an inorganic glass and a photopolymer as main ingredients; a photopolymer layer which is formed on this hybrid material layer and is subjected to heat or ultraviolet curing; and a second substrate which is disposed on this photopolymer layer in contact with the photopolymer layer and is bonded and fixed to the photopolymer layer.

2. The holographic recording medium according to claim 1, wherein

a thickness of the photopolymer layer is adjusted such that a combined thickness of the photopolymer layer and the hybrid material layer is uniform.

3. The holographic recording medium according to claim 1, wherein

a thickness of the photopolymer layer in a thickest portion is 5 μm to 50 μm .

4. The holographic recording medium according to claim 2, wherein

a thickness of the photopolymer layer in a thickest portion is 5 μm to 50 μm .

5. The holographic recording medium according to any of

claims 1 to 4, wherein

a remaining dynamic range, a refractive index, photosensitivity, an absorption coefficient, and a shrinkage factor per unit exposure of the hybrid material layer and those of the photopolymer layer are made approximately the same.

6. A method for manufacturing a holographic recording medium, comprising:

a step of applying a liquid hybrid material formed by filling an inorganic glass network to a first substrate with a photopolymer;

a step of gelating and drying the applied hybrid material to form a hybrid material layer;

a step of applying a liquid photopolymer which is cured by heat or light to the surface of the hybrid material layer;

a step of placing a second substrate on the photopolymer in parallel to the first substrate before the applied photopolymer is cured to thereby sandwich the hybrid material layer and the photopolymer between the first substrate and the second substrate; and

a step of allowing the photopolymer to cure by heat or light in the sandwiched state to thereby form a photopolymer layer.

7. The manufacturing method for a holographic recording medium according to claim 6, wherein

the photopolymer has a photosensitive band in a long wavelength side of a photosensitive band of the hybrid material or has a thermosetting property and wherein curing is performed in the step of allowing the photopolymer to cure
5 such that photosensitivity thereof is retained.